

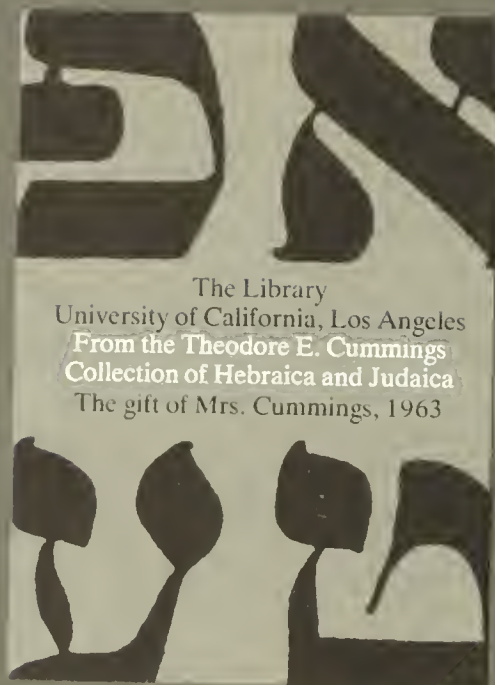
D
0
0
0
1
4
3
9
7
4

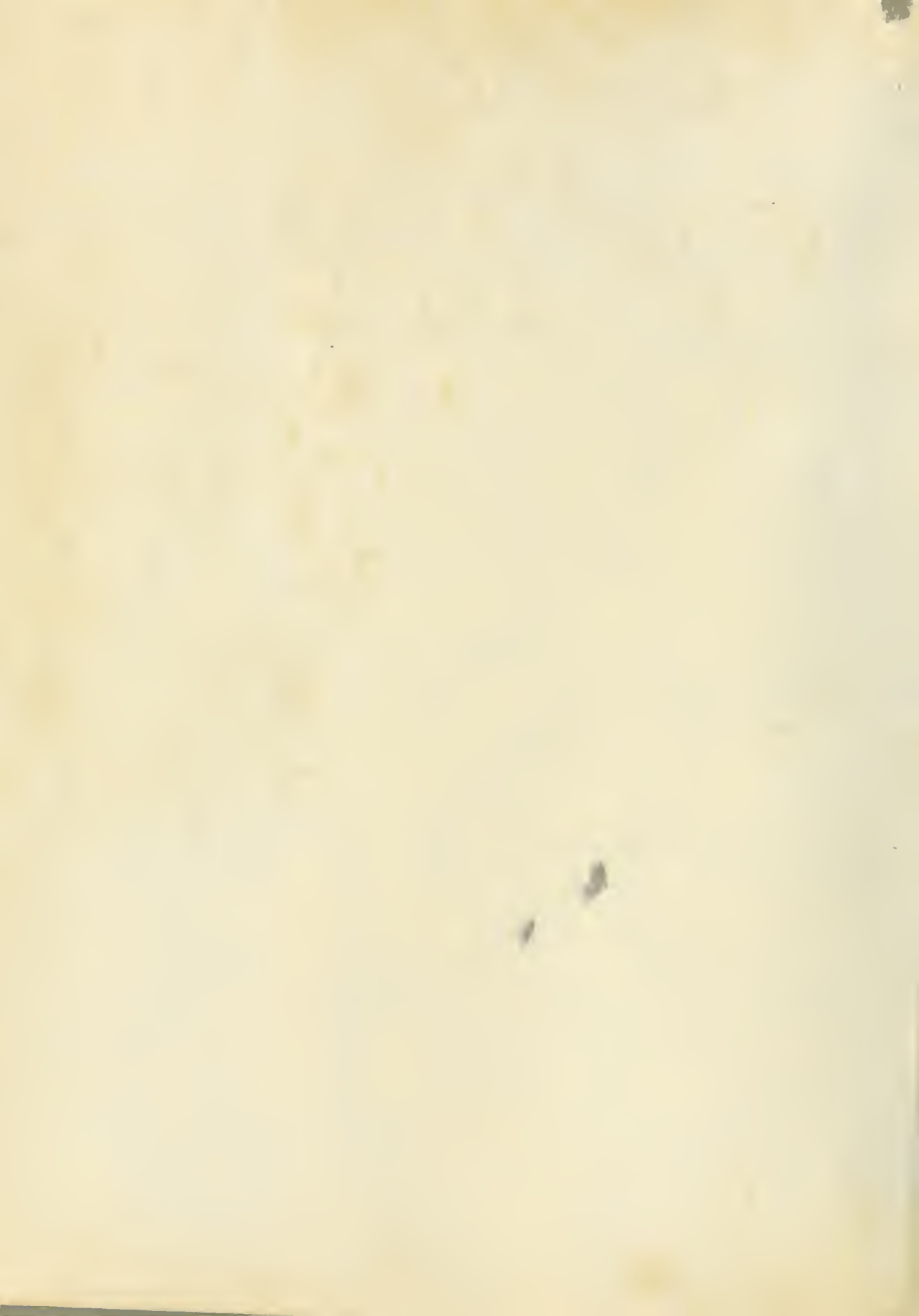


UC SOUTHERN REGIONAL LIBRARY FACILITY

BRUSH DRAWING

BY J·W·NICOL





BRUSH-DRAWING

BRUSH-DRAWING

A HANDBOOK

FOR TEACHERS AND STUDENTS

BY

J. W. NICOL

Art Master at the Hanson Higher Grade School
and School of Science, Bradford

LONDON

BLACKIE & SON, LIMITED, 50 OLD BAILEY, E.C.

GLASGOW AND DUBLIN

1901

Stack
Annex

5
061
371

CONTENTS

	PAGE
INTRODUCTION	vii
PLATES A AND B	<i>follow</i> viii
THE PRACTICE OF BRUSH-DRAWING	I
SUGGESTIONS FOR WORKING THE EXAMPLES	II
PLATES I TO LII	<i>follow</i> 16
ELEMENTARY PRINCIPLES GOVERNING THE CONSTRUCTION OF DESIGNS	17
PLATES LIII TO LXIV	<i>follow</i> 28

BRUSH-DRAWING

INTRODUCTION

It is not intended in this work to create anything new, or to diminish the value of what has already been written on the subject of Brush-Drawing by capable writers, but to endeavour to present it in a somewhat different light, with the idea of reducing its real or imaginary difficulties, giving examples to be worked, and showing how they are derived and how they and others may be built up.

Many teachers will admit a certain amount of dissatisfaction with the results they have obtained, both with regard to facility in the use of the brush and the excellence of the finished drawings. They will also confess to a wearisome repetition in the work they have done—work which has never extended beyond the preliminary stages of Brush-Drawing. Others who have interpreted the subject differently have been highly successful.

The scope of the work is not expected to extend beyond the Elementary School. What is contained in it will probably be superfluous to the trained Art Teacher and his more advanced pupils. The average Elementary School Teacher is one who must be acquainted with and teach a large number of subjects, and who does not claim to be an expert in Drawing. It is for the use of such that this work is intended.

The prevailing colour—green—is used as a matter of convenience, because plant life is the source of most of the drawings. It is a colour that is less trying to the eyes than some others.

The idea that on no account must the pencil be used in connection with Brush-Drawing is not supported here. It should not be used largely, but in many cases its presence is better than its absence.

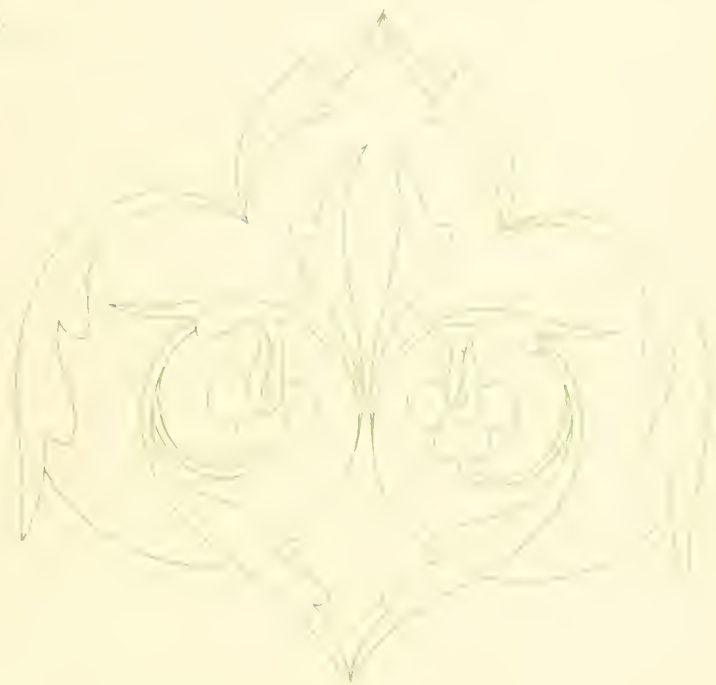
It is hoped that the examples, while being useful as copies, will serve as suggestions for original work.

Though Brush-Drawing is the subject before us, that is no reason why the brush should be advocated in opposition to the pencil. Each should help the other. In making an outline with the pencil, the child is apt to look upon the drawing as a series of lines, and to forget that the spaces enclosed by the lines constitute the drawing. The use of the brush will correct this fault, for it is essentially the instrument of breadth and mass. The pencil will be used all the more intelligently after some practice in the use of the brush. But it must be remembered that the pencil is the more handy and portable tool, and can be used at all times when any other method of expression would be impossible. The brush produces quick results. What is wanted is placed on paper at once, and does not leave so much to the imagination as an outline. Owing to its flexible nature it is very susceptible to pressure. Lines and masses of varying thickness and breadth can be made without moving it from the paper. The nerves and muscles of the hand and wrist are brought into more perfect condition by the variety and delicacy of touch required in the execution of any brush-drawing. The teacher should know something of the advantages, or otherwise, of this mode of drawing. One of its features is that during its process there is no possibility of erasure, though, of course, a mass may often be extended in some way to cover an error which has been made. The knowledge of this may make the pupil nervous at first, but he will exercise care and thought in his drawing which might otherwise be absent. He must not be allowed to become timid and hesitating. He should be encouraged to draw boldly and with freedom, even at the expense of a little accuracy.

One or two remarks may be made here on matters which are indispensable to Drawing. They may appear obvious to most teachers, but they will bear repetition.

The brush must not be "gripped", but held with only sufficient firmness to control its motion. The fingers should be well away from the point of the brush, which should move easily, lightly, and with as much rapidity as is consistent with good drawing. Absence of stiffness and absolute freedom of hand, wrist, and body should be insisted upon. The body should be in an upright position, and the paper in front of the pupil and at a considerable distance. A great deal of harm is done by working too near the drawing, for under these circumstances only the particular portion which is being drawn can





be seen, and much of it may fall outside the cone of vision. Correct drawing is simply the placing of masses in their proper position, and making them the proper size in relation to one another. In order to do this the draughtsman should see every part of the drawing at the same time; this necessitates his being at a distance from his work.

Outlining a mass in Brush-Drawing is an interference with the proper functions of the brush and should not be allowed. Many shapes may be made **Freehand and** with one stroke of the brush, but the idea which frequently **Brush-Drawing** obtains, that all separate forms must be so constructed, leads to unnecessary labour and limits the possibilities of a drawing. However, the brush is the instrument of breadth, and one of the objects to be attained should be the execution of the drawing with as few strokes as possible. The position of a mass or space must be calculated beforehand. The eye must plan out the exact portion of the paper to be occupied by the drawing before the brush touches the paper.

Modelling in clay, drawing in mass, and outline drawing may be made to assist one another. With young children especially, the most natural and most educational mode of proceeding would be to model the object in clay, represent it flatly with the brush, and afterwards draw it in outline. The outline drawing would generally contain details that could not be shown by flat washes in mass, but the brush-drawing will have served the most important purpose of having given a better notion of the shape, balance, and space covered by the figure than could be obtained by the outline alone. If copies are used in Freehand Drawing, their value will be enhanced, wherever they admit of it, by their being executed first in brush form, not as outline drawings, but having all the enclosed spaces washed in solidly. *See Plate A, figs. 6 and 7, and Plate B.*

The "blob" seems to be generally accepted as the "alpha" of Brush-Drawing. There would not be anything seriously wrong about that if it **Brush Forms** did not, as it is often made to do, cover most of the whole range of the subject. The "blob" should be put in the cold somewhat, as far as beginners are concerned, for the following reasons:—When a child makes its first efforts to draw with slate and pencil, chalk, or any other material with which it can spoil paper, it does not know anything about "blobs", but tries to produce a resemblance of something it sees or has

seen, such as a circle (which to the child may mean a ball, penny, apple, orange, &c.), a cat, a face, a house, a flower, &c. The imperfections of these representations are due to the child's not being able to see things properly, to its inability to grasp the details, and the want of power and training in the hand. But, nevertheless, the motion of the hand and eye is in the direction of the shape of the object represented. The logical training of the child should tend to development on these lines, and if it is to use a brush, it seems natural that it should form some of these familiar objects mentioned rather than shapes it does not understand. Then, the position of the hand in forming "blobs" is frequently an unnatural and awkward one, encouraging a method of holding the brush which cannot be continued when making larger and more advanced drawings. Certainly there is much in the way of Brush-Drawing in which the "blob" plays a part. It forms various useful shapes when dragged out or thickened in different places. Though it should not be condemned, its frequent use should be discouraged as not serving any useful purpose. It is only one element out of the immense number at the disposal of the teacher. Various arrangements of what are known as "brush forms", many of which are adapted from the "blob", may be found on Plates V, X, XI, XII, and XIII.

Infants and young children will naturally put a good deal of colour on their hands, on the desks, and on parts of the paper where none is expected or required. The result may not be satisfactory from an **Freedom from** **Restraint** æsthetic point of view, but the teacher must have a little patience. Practice will do a great deal to remedy this. It is considered of first importance, as a rule, that the exercise book should be spotless and neat. The teacher is often bound to take this view in order to fall in with the higher powers and their methods of judging work. The book is not an exercise book at all, but, when finished, is the product of excessive care and trouble in making something that shall not disfigure the beautiful whiteness of the drawing paper. Each page has an imaginary caution at its head, and work upon it must be commenced in fear and trembling. The teacher must keep the drawings so much within the powers of his pupils that there will be no fear of making a mess. Further advancement, except at a very slow rate, may mean spoiling these exercise books. This kind of thing stifles the child. He is afraid to strike out as he would like to do. Let the drawing be spoilt,

if it is honestly spoilt; the child will have discovered something in his failure and will do better another time. The finished article is very well in its way, but if there is no freedom for development there is not much to hope for in the end. A competent judge can see if any progress is being made, whatever may be the appearance of the exercise book.

This is not a plea for slovenliness. A teacher should be able to prevent anything wilful of that kind. Children naturally take as much pleasure as the teacher in producing their best work. By all means cultivate order, appreciation of space, and beauty of form in the single brush stroke as well as in the highly finished or elaborate work.

SECTION I

THE PRACTICE OF BRUSH-DRAWING

THE PRACTICE OF BRUSH-DRAWING

The teacher who attempts the subject for the first time will probably ask himself one or two questions, somewhat as follows:—"As my training in **Teacher's** Drawing has consisted of a more or less imperfect rendering of **Capability** Freehand Copies and Geometrical Models, am I competent to instruct others in something altogether different, of which I have had no experience? How shall I set to work, and how shall I know whether what I am teaching is right or wrong?"

It is hardly possible to answer these questions satisfactorily. If he is ignorant of the use of the brush, he must practise. What he will make of the subject depends upon the interest he takes in it and the thought he gives to it, as well as his natural ability as a draughtsman. His principal difficulty will be in finding the best thing to draw. He will feel a want of system, and will only have a hazy notion of the object to be gained.

Brush-Drawing should have for its goal the training of the eye to appreciate form, the training of the hand in delicacy and firmness of touch and ease of movement, so that it may assist the eye in putting shapes into their proper places, creating and fostering a love for the beautiful, and developing the mental faculties by exercising the powers of observation, imagination, and invention.

If the children are very young, the lessons must be correspondingly simple. In all cases it is recommended that a commencement should be made with simple objects, but to gain some command over the brush **Drill** there might be sandwiched a sort of drill or brush gymnastics such as is shown on Plate V. These may be enlarged upon to any extent. Their purpose should be to show how different forms are developed by brush strokes, by their exercise to cultivate continuity and variety of touch in making forms of even or different breadth and curve. The straight line and curved forms

may be contrasted with one another placed in series or alternated. These exercises may be continued by more advanced children as on Plates VI, VII, and VIII. These may be extended at the teacher's pleasure, and should include every variety of the brush's motion. Further, they should be made within certain limits and repeated. Referring to Plate VIII, Figs. 1, 2, and 8 could be easily made without regard to position or size, but if they were to fit a certain prescribed space, or to be repeated at even heights and distances as in Figs. 3, 4, 5, and 6, more care would have to be exercised, the eye would be continually watching the spaces, and this exercise would be a better training on account of the increased mental effort necessary in their production. These exercises should only be attempted after a great deal of practice in the examples on Plates V and VI.

All forms in this drill which obviously admit of it should be made with one stroke of the brush, and others with as few as possible. The benefit derived from this practice will appear in a free movement of the pencil in Freehand Drawing. It will be useful when working the exercises on Plate VI to repeat each one, commencing the second one at the point corresponding to that at which the first was finished. For example, in the first figure the movement should be from *a* to *b*, and in its repetition, from *b* to *a*. Those on Plate VII are more difficult but are at the same time of greater value, for they not only require freedom of motion and delicacy of touch but accuracy of placing. However desirable it is to produce a good line or brush stroke, it is of greater importance to know where to put it.

Paper that has been used for other purposes, so long as it will take the colour readily and legibly, may be employed for this drill where economy is necessary.

Plate I illustrates, somewhat imperfectly perhaps, the way in which very young children may begin with a touch of the brush on paper, and how it may **Work for** be reduced to an orderly shape, arriving through the pointed, **Beginners** curved stroke at the ellipse and the circle. The straight line, though difficult to the young child, develops uniformity of pressure and control over the brush. The curved line of uniform thickness is perhaps easier. These elements may be put together in a variety of ways involving correct spacing and distance. Additional examples are given on Plate II, and these may be largely added to by the exercise of a little ingenuity.

With regard to natural objects, though they are doubtless more interesting to the pupil than the forms to which reference has just been made, there must be some selection. Those having two dimensions only, *i.e.* length and breadth, are necessarily easier to draw than objects having three—length, breadth, and thickness. The third dimension is a stumbling-block to older children as well as to young ones, and a want of appreciation of it is not confined to childhood. We have seen early attempts to draw a face in profile in which the child shows both eyes, not because he can see them, but because he knows they are there. For the same reason he will represent the top of a tea-cup as a circle though he is taking a side view of it. He does not know anything about foreshortening or perspective. Flat objects are more suitable for Brush-Drawing, and of these, leaves and flowers are the staple, but such objects as a top, hammer, spoon, bottle, tomato, &c. are useful subjects for flat representation.

The leaves chosen for a commencement should be simple in outline. Complicated forms or those with serrated edges should be left out. They may be pinned on the black-board with a sheet of paper as a background, either singly or growing on the stem. Most of the children would be able to bring specimens of some kind. Many of them would be too difficult to draw and would have to be discarded. The first idea of orderly arrangement in a drawing may be given to the child by drawing a symmetrical leaf. The value of the mid-rib as the dividing line of a symmetrical shape should be pointed out, and the leaf contrasted with an unsymmetrical one. This principle may be pursued further by balancing two or more leaves upon a central axis. Children early acquire a liking for arranging things, which is developed in kindergarten work. If there is a sufficient quantity of leaves, each child should arrange his own, in pairs, side by side, point to point, back to back, &c., or their number may be increased in series or groups. They may be placed on each side of a central axis alternately or opposite. Leaves of a different kind may be placed between them for the sake of variety and interest.

It is possible that some of the arrangements may be too difficult for the children to draw and will have to be neglected. If the leaves are small in number these different arrangements may be made by the children in front of the class, the leaves being pinned on a board. The stem, and the way in

which the leaves are attached to it, should be noticed. The pliability or rigidity of the stalk should determine the amount of curving in the drawing.

The use of these loose leaves is of great value at all stages. They can be rapidly arranged, and as quickly as ideas occur they can be executed. This practice fosters a method of designing—which is the proper one—of laying down the masses broadly so that the effect of the design can be seen at once and details worked out afterwards.

At a sufficiently advanced stage drawings of different views of the leaf may be made, *e.g.* as it would appear when looked at from the back or side or when foreshortened, when twisted so as to show the upper and under sides, when wrapping round a stem, &c. Examples of this twisting, for the sake of variety, or to make the leaf fit the prescribed space, can be seen in some of the illustrations.

Slate and pencil, or brown paper with charcoal or chalk, are useful to children in making preliminary drawings of an original character, as they lend themselves to easy alteration.

Very much in the way of originality is not to be expected from children, in fact nearly all their so-called designs are merely reminiscences—a selection **Cultivation of** made from many different forms with which the memory is **Memory** stored. This is also true of older and skilled designers, who take their first ideas from natural forms or from existing designs, arranging and converting them in such a way as to be most suitable for the purpose for which the design is intended, and giving, at the same time, the most pleasing effect. This store should continually be added to, and everything that is drawn should be one more element for further use. The child should be encouraged to reproduce these mental notes, making as many changes, combinations, and developments as he can. A good copy now means something to him. He compares his own weaker efforts with the result of superior knowledge and long practice and benefits thereby.

Children should not be allowed to draw flowers, leaves, birds, insects, &c. with all their details of colour, and light and shade. Their early attempts **Breadth of** should be of the broadest character. Detail will come gradually **Drawing** but will be liable to spoil elementary work. Though flowers and leaves should always be drawn as nearly as possible in their natural colours, children cannot be expected to make a picture of them. There are processes

of softening and gradating colours and shadows which can only be put into practice by advanced pupils. Some slight reference will be made to these at a later stage. The characteristic qualities of all brush-drawings in elementary schools should be boldness and freedom: very little minute work should be allowed, and nothing in the nature of stippling.

No drawings are exact imitations of nature. If they are correct in shape they have no solidity. In the case of a flower, the smell is wanting, and the colour is almost certain to be defective. They are therefore conventional to some extent, but greater and more marked changes are generally required when using leaves or flowers as the basis of a design. A great many details must be left out, and changes made in colour, arrangement, &c. to suit the purpose for which they are intended. These changes children find difficult to make. Examples are given showing the derivation of forms used in the design from the natural one. Of course, numbers of others, suited to the brush, which have not any real natural source, may be converted into designs.

It has been said that children can only produce approximately correct drawings of flowers and leaves. Still, their use is of importance, as nowhere else can the same brilliance and purity of colour be seen, and the sense of colour will grow in refinement by their study.

It will be well not to indulge too largely in flower drawing. One such drawing may provide material for adaptation and designing in a small way for weeks or even months. Leaving out of consideration the inconvenience of having to provide flowers frequently, by continually drawing them with all their irregularities of growth, latitude is given for inexactness and the cultivation of a habit of inaccuracy. The position of a leaf or stem may make no material difference to the appearance of the drawing, therefore a good deal of unwarrantable liberty may be taken with the original. The eye and hand receive far better training if symmetrical or balanced drawings are made, where every line has its exact position, and where inaccuracy would be fatal to the finished work.

With practice, many teachers will be able to construct, very largely, their own copies, and will get a good deal of original work out of the class. For children this kind of work has an interest that other drawing has not, and some of them become surprisingly clever in the creation of designs. Copies will, nevertheless, be used, and there are doubtless good

ones to be had. One of the uses of good copies is as a corrective of inferior original drawings. So-called designing without proper direction may be productive of much harm. Well-drawn copies are, as a rule, better than a number of badly constructed designs, executed in ignorance of the laws which should govern their building up. We need not always have recourse to specially prepared copies. Something already designed may be dissected, care being taken that the subject selected is not complicated in its lines. A bit of wall-paper, a tile, a piece of damask, print, or brocade, a piece of moulding, wood-carving, plaster cast, cup, vase, &c. may serve as examples in which the construction, such as the elements used, direction of lines, twistings, curves, junctions, &c., may be noticed. A look at the window of a furniture dealer or decorator's shop will suggest ideas.

Avoid complexity, which, except in the hands of an expert, often means confusion. Keep the design as simple as possible. What is wanted is clean, free, and accurate drawing, along with beauty of form. Where **Simplicity** the lines or forms cross, they should do so at right angles, or nearly so, to prevent any confusion as to their direction. Not only are the masses forming the figure of importance, but the spaces left uncovered are equally part of the design.

The colours should be bright and pleasing. Drawings will usually be executed in one colour. The number of colours will be restricted on the ground of expense and the time which would be occupied in distributing them, but where children can be induced to provide their own, more elaborate drawings may be made, involving the proper distribution and combining of colours.

It is generally understood that brush-drawings must be done without aid from other instruments. But it is folly to blindly adhere to a rule when **Brush assisted by Pencil** common sense demands that there shall be a departure from it. Geometric figures are largely used in ornament, either by themselves, as lines enclosing natural or conventional forms, or as skeletons or plans upon which the ornament is to be built. Being geometric forms, exactness is one of their principal attributes. Pencil, ruler, and compasses may be used in the construction of these figures, purely from motives of convenience, for there are thousands of more beautiful forms to draw which will better repay the time and labour spent on them than the production of faulty

squares, circles, &c. Common sense again will determine when these figures shall be constructed with or without mechanical assistance.

That we don't trouble to see the copies or objects properly is the cause of very much of the bad drawing we see around us. The child begins to use his **Necessity for careful Study** pencil after the most cursory glance at what he is drawing. He has no definite idea of its shape, space, and proportion. It has made no impression on his mind. He looks upon his india-rubber as his salvation, and draws many lines that he knows cannot have the remotest chance of remaining on the paper. If he makes a careful study of what he is going to draw, as he should do, the need of india-rubber will diminish.

In Brush-Drawing, where erasure is impossible, this close examination is compulsory, and for this reason alone, brush work will improve the general drawing.

SUGGESTIONS FOR WORKING THE EXAMPLES

PLATE I.—Figs. 1 and 2 are brush touches or strokes reduced to orderly shapes. In Fig. 2 the drawing *b* is constructed by first making a stroke tapered at both ends and placing on each side of it another like those of *a* or *c*; or, *b* may be made by drawing *c* and filling in. There must be no outlining. Diagrams 3, 6, 8, 9, 10, and 11 show simple uses which may be made of this figure. Varied arrangements of Figs. 5 and 6 are useful practice.

PLATE II.—Advantage may be taken of the squared paper in Figs. 1, 2, 5, and 6. Fig. 8 is the most difficult. Draw the vertical stems, placing them without mechanical assistance, then draw the vertical leaves. The others will fall into their places without difficulty. Fig. 9 may be drawn with, and afterwards without, the pencilled diagonals.

PLATE III.—The first six figures are simple arrangements of leaves. A little ingenuity will add largely to them. Figs. 7–10 show different kinds of stem-junctions. In Figs. 11 and 12 the stems should be drawn first, and from the point of the leaf, so as to form a line upon which to balance the leaf.

PLATE IV.—Different forms are introduced. Where vertical and horizontal straight lines appear as boundaries of a drawing, the pencil, or even pencil and ruler, may be used at the teacher's discretion; where no useful purpose is served, by drawing them freehand.

PLATE V.—These exercises, while showing the development of brush strokes, should be used as a kind of drill. PLATES VI, VII, and VIII furnish additional exercises of increasing difficulty to be used in the same way. In Plate VI, Fig. 1, draw from *a* to *b*, then from *b* to *a*, treating others similarly. Plate VII converts the forms of Plate VI into symmetrical drawings. These are most useful, as they involve accuracy of drawing and correct spacing. The exercises on Plate VIII are much more difficult, and are more suitable for advanced pupils.

PLATE IX.—These letters must not be “painted”. The motion of the brush must be similar to that of the pen when writing. Extend the exercise to small letters and words. Hold the brush nearly vertically.

PLATE X.—*Try* to make all strokes which will allow of it with one movement of the brush, but don't leave a stroke badly made if it can be corrected with another touch. Draw the uprights first in Fig. 6. Fig. 7 is an easy exercise if the squared paper is used.

PLATE XI.—In Fig. 3 a construction line may be used, as it is difficult to draw without it. Each stroke on the left of a symmetrical figure must be followed immediately by the corresponding one on the right.

PLATE XII.—The flower forms (*a*) may be rendered in red, blue, or other colours. Fig. 2: mark points *b* and *c* (*c* being under *b*) with pencil or point of the brush. Draw the long curved lines, the upper leaf next; put the form *d* in position and then those on each side of it; afterwards draw the other leaves. Figs. 3 and 4: construct the geometrical figures first.

PLATE XIII.—Fig. 3: draw *a* in green, *b* in red. The semicircular curves are difficult. The curves would be more beautiful if they were elliptical. Fig. 4: draw *a* and *b* in different colours. Place all the vertical forms first, then those whose edges are parallel with the line *c d*.

PLATE XIV.—Fig. 2 is a development of Fig. 1, and Fig. 5 of Fig. 2. Numbers of others may be formed, using the same elements. The dark centres in Fig. 4 are second strokes made upon the first after it is dry.

PLATE XV.—Conventional flowers produced by brush strokes. Notice in Figs. 10 and 11 the proportion and gradation in size, which is also a feature of many plants such as the foxglove, lily of the valley, &c.

PLATE XVI.—Practise the elements. Notice their similarity to natural forms. Equality in size and spacing is the leading characteristic of Figs. 2 and 6. Fig. 7: draw the border first. Mark with the brush the points *a*. Draw the curved lines, the junctions being nearly opposite the points *a*. The others are not difficult.

PLATE XVII.—The building up of all the figures from the first diagram is evident.

PLATE XVIII.—The use of squared paper renders all the figures easy of construction. Colour the berries in Fig. 4 red or purple.

PLATE XIX.—Fig. 1: colour the leaves (*a*) green, and the conventional flowers (*b*) red. Any other suitable natural flowers and leaves may be used. Fig. 2: the unit may be drawn separately and elaborated. When forming a repeating all-over pattern, draw the parts *a*, carefully calculating the space *b*, in order to allow for the unit between and below.

PLATE XX.—Generally, in the three-lobed conventional leaves, draw the centre one first. In all five figures notice the spaces between the leaves. Fig. 4: each leaf consists of two brush forms, joined at the bottom.

PLATE XXI.—Figs. 1 and 2 are suggestions from the iris; Fig. 3 from the laburnum. Fig. 3: draw the three stems. Then notice the position of the points *a*, *b*, *c*, and *d*.

PLATE XXII.—Simple grasses. Fig. 2: *abc* is the most difficult curve. Notice the distance from the vertical and horizontal border, and watch it while drawing. Observe that the curves are at nearly equal distances apart. Fig. 3: draw first the principal curved blades, at equal distances and of the same height.

PLATE XXIII.—The figures on this Plate are not necessarily to be copied. Figs. 3 and 4 are examples of one method of drawing a natural flower. They are not by any means brush-drawings, but their usefulness is sufficient excuse for their introduction. They consist of an outline drawing, having the shadows and markings drawn in pencil, the whole being washed over with flat colour. This manner of drawing obviates the difficulty which children experience in making gradated tones with a brush. Other examples of this pencil work are to be found on Plate XXVII, Fig. 3, and Plate XLVIII, Fig. 2.

PLATE XXIV.—Illustrations of conventionalized tulips, and different views of flat and twisted leaves. The turning over is shown by the space left between the parts.

PLATE XXV.—Figs. 1 and 2 are only examples of dozens of arrangements which may be made in geometric figures. Fig. 4: draw the flowers first; the distances *a b c d* are about equal. Look at the spaces for the position and direction of the leaves and stalks.

PLATE XXVI.—Construct other geometric figures and other designs to fit them. The unit in Fig. 2 may be drawn singly. Fig. 3: draw the borders and then the flowers. In drawing the leaves keep the loops at the centre equal.

PLATE XXVII.—Two drawings of a sprig of holly. Fig. 1 is a drawing in flat wash, being a general impression of the position and shape of the leaves, without any detail. A few flat touches upon Fig. 1 will indicate the marking and light and shade, as shown in Fig. 2. The lights on the berries may be got by wetting the light portion with a clean brush and washing round it with the colour, or by a touch of Chinese white before the colour is quite dry. Fig. 3 is an example of the use of the pencil in getting the effect of light and shadow, described in Plates XXIII and XLVIII.

PLATE XXVIII.—Prickly holly. Berries as before. Fig. 2 may be drawn geometrically. Though the freehand drawing of occasional straight lines is necessary and useful, to spend much time in so constructing geometric figures is unprofitable and tedious. The sides and angles of the square will be a sufficient guide in drawing Fig. 2.

PLATE XXIX.—Fig. 4: construct the rectangle. Wash in the background. Keep the brush full of colour. Work from left to right, and from top to bottom, sloping the surface, and take out the excess of colour with a dry brush. Draw the stalks directly with the brush, dividing the surface into parts of equal area.

PLATE XXX.—Figs. 1-8 may be drawn, but they are principally intended to show a few of the ways in which the flower of the wild rose may be conventionalized. The form of the flower has a circle and pentagon as its basis, but instead of drawing these figures it will be better to draw five radiating lines from a point, of equal length, the five angles thus formed being also equal.

For drawings of the Wild Rose see Plates XLVII and XLVIII.

PLATE XXXI.—The figures of this plate show the spring of the stalks, and PLATE XXXII gives examples of their use in borders.

PLATE XXXIII.—Fig. 2: draw the vertical and pendent leaves first. In Figs. 3 and 4 tinted backgrounds may be used, and flowers and leaves varied in colour. Observe that the straight line joining the points of the leaves in each pair cuts the stem at right angles. Though the leaves and flowers are the principal part of the drawing, the stems, *a* and *b*, are a key to the spacing. Fig. 4: draw horizontal and vertical lines bisecting each other, and join to form the rhombus. Produce the sides to form others. The lines of the rhombus are a guide in drawing.

PLATE XXXIV.—Simple repeating patterns on the wild rose, based on the square and diamond. Fig. 1: the spiral curve (*b*) will require careful drawing.

PLATES XXXV, XXXVI, and XXXVII are drawings suggested by common plants and flowers. The teacher is recommended to encourage the examination of other plants, letting the pupils put down the results as simple designs in brush form. Plate XXXV, Fig. 1, is suggested by the acorn, Fig. 2 by the chestnut leaf, Fig. 3 by a buttercup, and Fig. 4 by the honeysuckle. Plate XXXVI, Figs. 1, 3, and 4, may be considered as adaptations from the iris, hawthorn, and poppy. A tulip would suggest Fig. 1, Plate XXXVII, and the oak, Fig. 2.

PLATE XXXVIII.—The first seven examples are more or less conventional forms of the butterfly, while Fig. 8 is suggested by the dragon-fly. It will be well, if possible,

to draw from examples in a School Museum, imitating the natural colour as well as the shape. Some colours may be placed upon others without making any material difference to them, but if, for example, blue is placed above yellow, the blue must be sufficiently thick to prevent the yellow from showing through it.

PLATE XXXIX.—Stuffed birds form very good models. They should be drawn broadly, neglecting anything minute. Such drawings as Figs. 5–10 may be adapted from illustrations in reading-books. Children should be encouraged to draw on the memory for similar bird and animal forms.

PLATE XL.—Look well at the drawings. Examine the shapes and calculate the distance between the parts before putting anything on paper. Draw the body of each unit before drawing the wings of any of them. In Fig. 2 place them along an imaginary diagonal of the square, allowing as much width as possible for the wings.

PLATE XLI.—Mark the points *a*. The butterflies are vertically above it. A vertical line may be drawn from *a* in pencil to enable the pupil to make the spaces enclosed by the stems symmetrical.

PLATE XLII gives two examples after the Japanese method. Make the strokes firm and without hesitation.

PLATES XLIII, XLIV, XLV, and XLVI are examples of simple forms adapted to fill geometric spaces. A sprig or bunch of leaves or flowers represented on paper, enclosed by three, four, or more straight lines, has no claim to be called a design unless there has been some planning or arrangement of those leaves or flowers to suit the given figure. If the border be removed from a properly filled space, the remaining ornament by its outline would leave no doubt as to the original shape of the figure. The initial idea may be set down in line or mass.

In Plate XLIII, Fig. 1, a few lines suggest the drawing for Fig. 3. Let the lines be few and bold, with as much beauty as possible, and arranged so as to be suitable to the space to be filled. Fig. 3 is manifestly more a drawing in line than mass.

In Plate XLIV, on the other hand, the latter is the prominent idea. Generally, it is better to design from mass than line. Think out a solid shape enclosed by few and simple lines, having its contour or boundary as beautiful as possible. It may afterwards be broken up into lines or smaller portions in the form of leaves or flowers.

Plate XLVI illustrates this breaking up to some extent. But not only should the mass be designed, but the unfilled spaces also, for they take an equal share in the design. The mass originally thought of may be converted into a space, surrounded by other ornament. Many designs owe much of their beauty to the shape of the unfilled spaces. If plant form is used, leaves, flowers, stems, and spaces must all be made to contribute to the beauty of the whole.

PLATE XLVII.—Fig. 1 is a drawing of the wild rose, the markings and light and shade being produced with the brush. In drawing the hip, leave the light portion sufficiently damped with clean water, so that the colour will run slightly into it. Fig. 2 is the flat drawing more suitable for ornament.

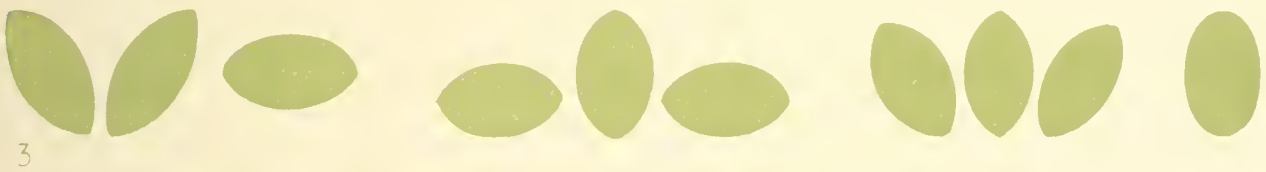
PLATE XLVIII.—Fig. 2 shows the effect of washing over the drawing of Fig. 1. Compare the light and shade result with that of Fig. 1, Plate XLVII. Plates XLVII and XLVIII should be taken as occupying a position between Plates XXIX and XXX.

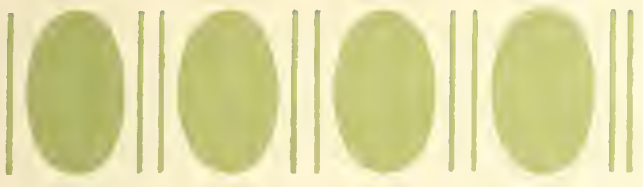
PLATE XLIX.—Design based on the blue-bell. The unit may be drawn as a separate exercise. In drawing, watch the position of the leaves and flowers with relation to the rhombus and its diagonals. Vary the unit, and repeat in the same way.

PLATE L.—Fig. 1 is derived from the wild hyacinth, and Fig. 2 from the buttercup.

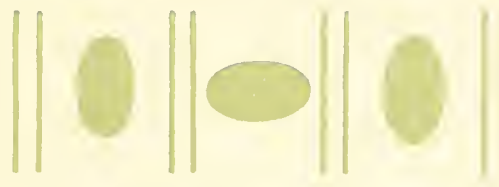
PLATE LI.—Fig. 2: draw the borders, follow with the leaves marked *a*, then draw (*b*) the flowers, and the stem (*c*) in the order given.

PLATE LII gives illustrations from the natural flower of the principle of radiation. See Plate LX.

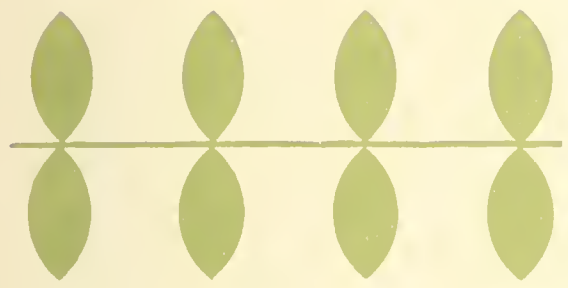




1



2



3



4



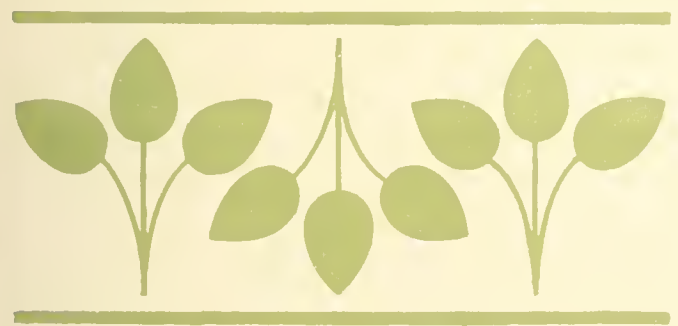
5



6



7

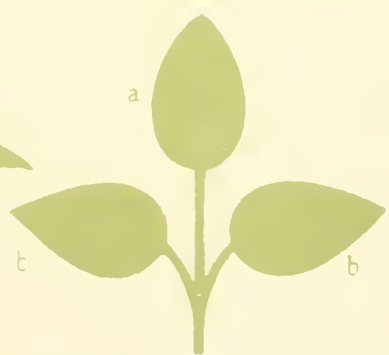


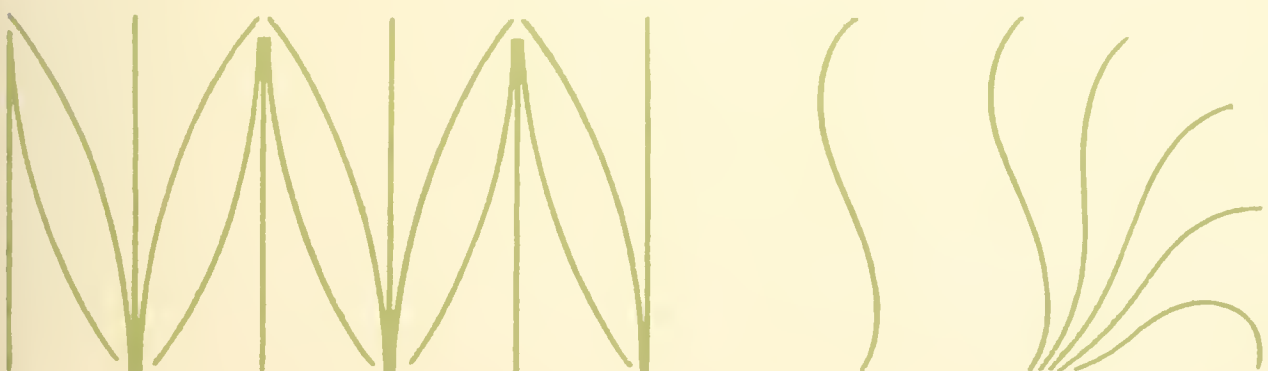
8



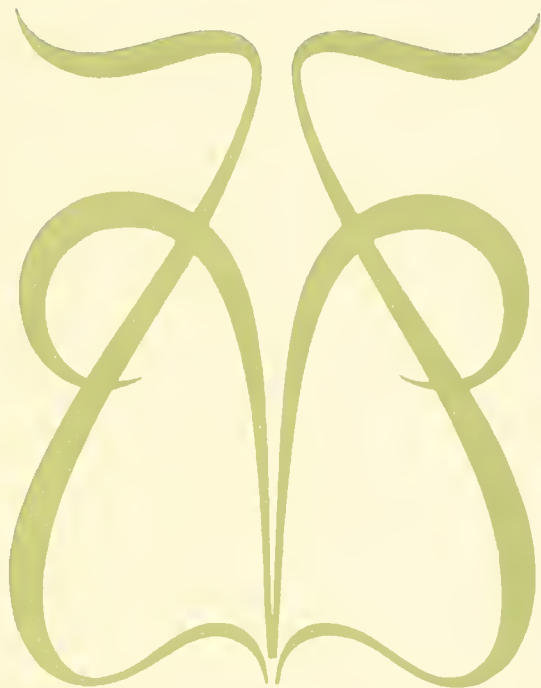
9









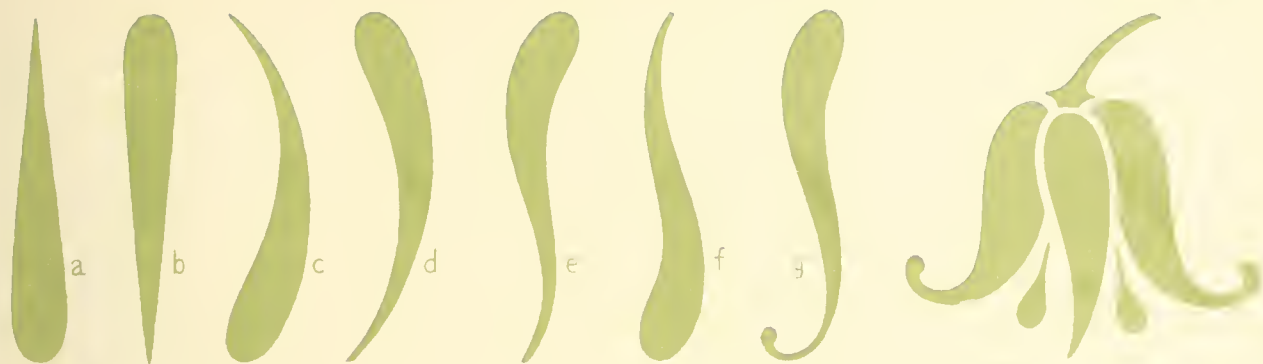




B D L

M P S

T U W







1



3



4





1

2



3



4

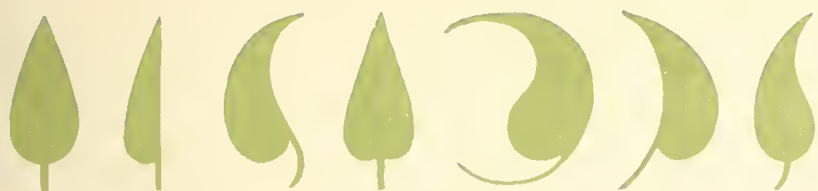
a

b

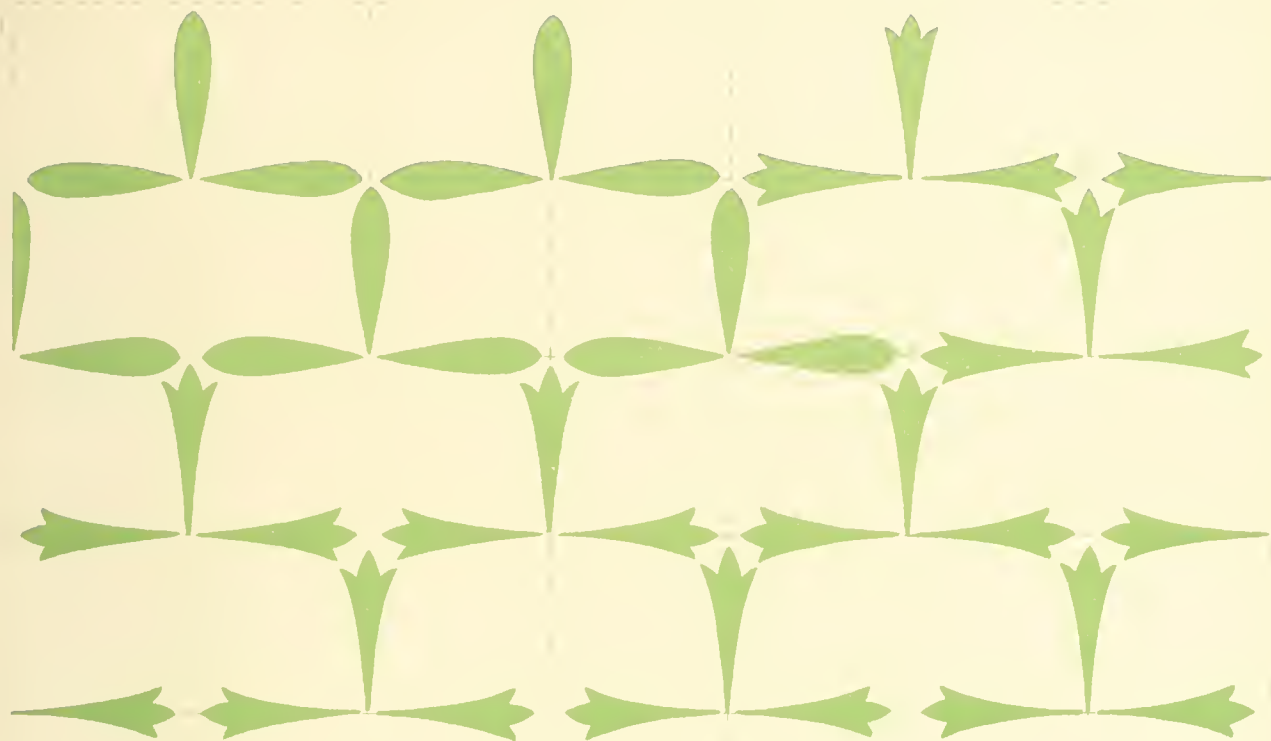












4









1



2



3







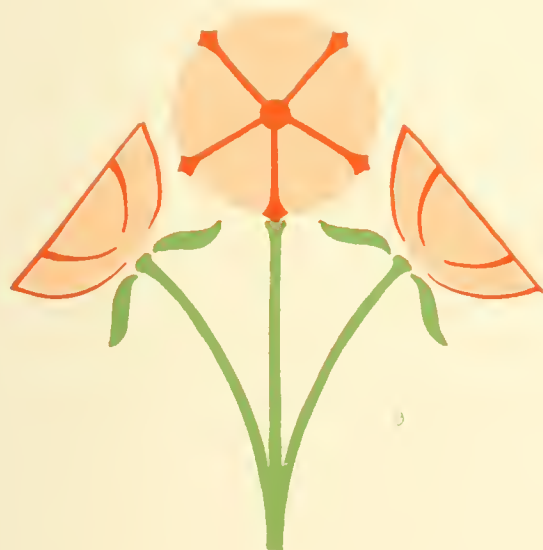
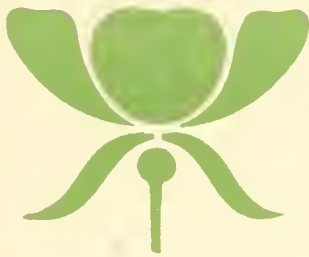
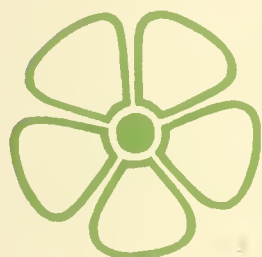
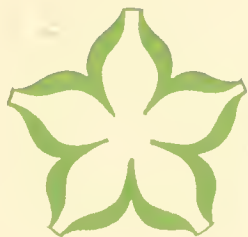
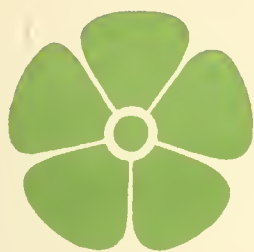




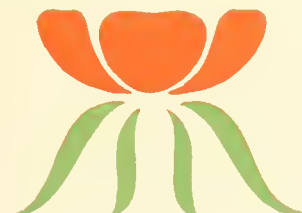
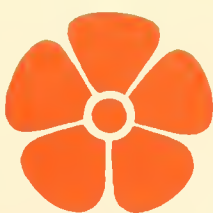
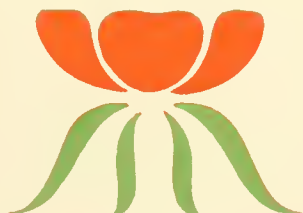
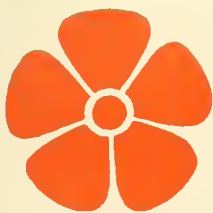




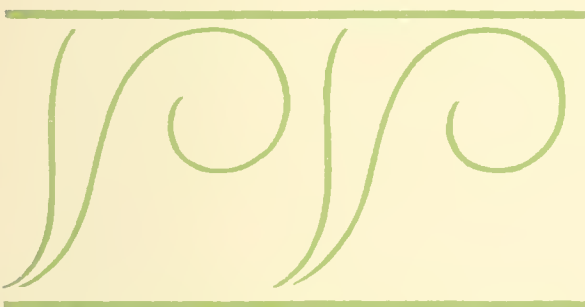
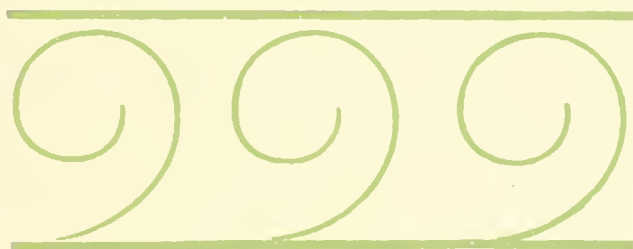
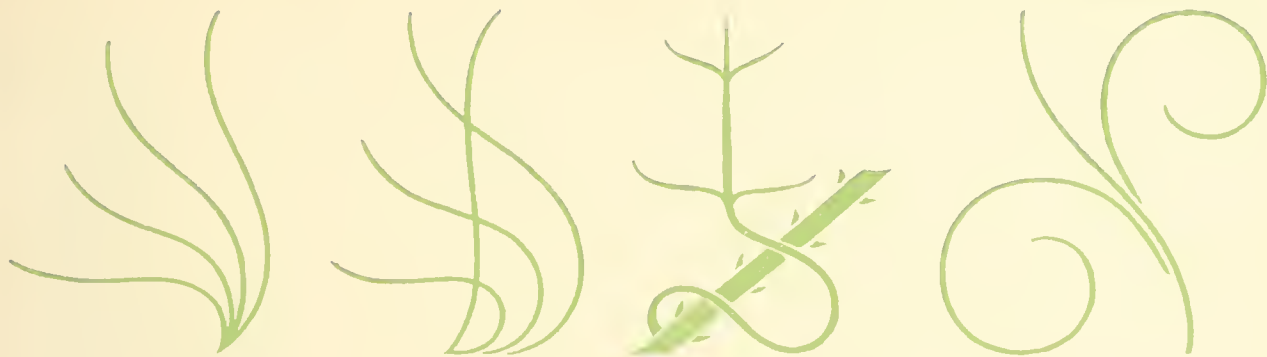


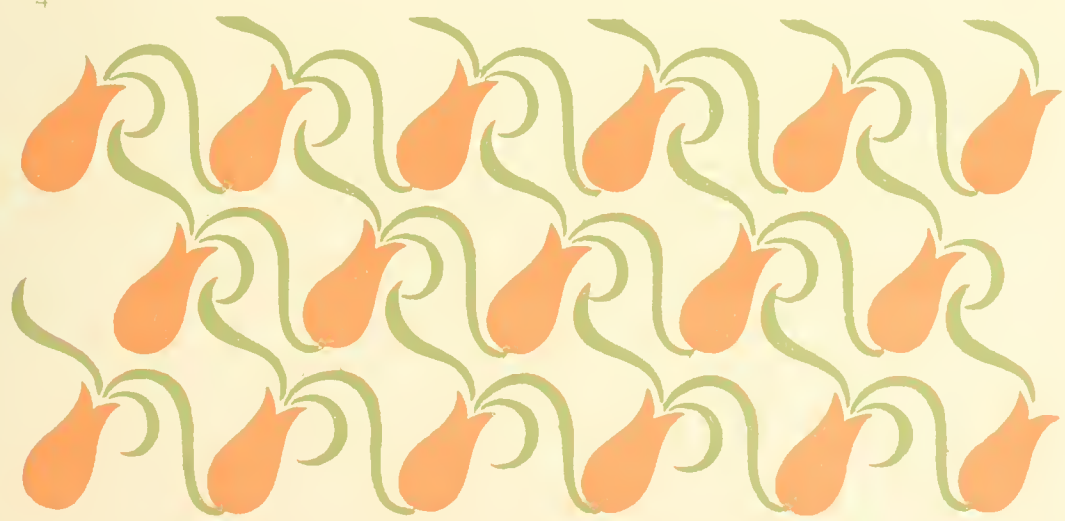
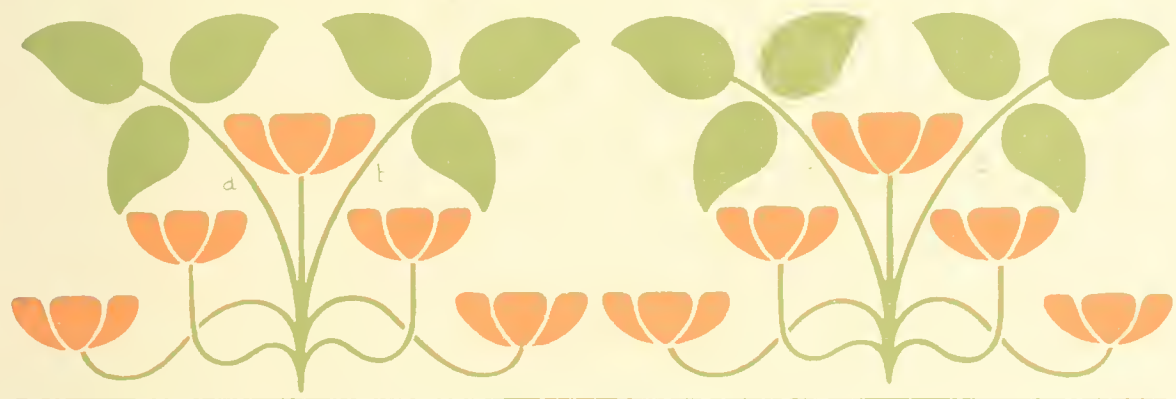


11









1

1

1



2







3







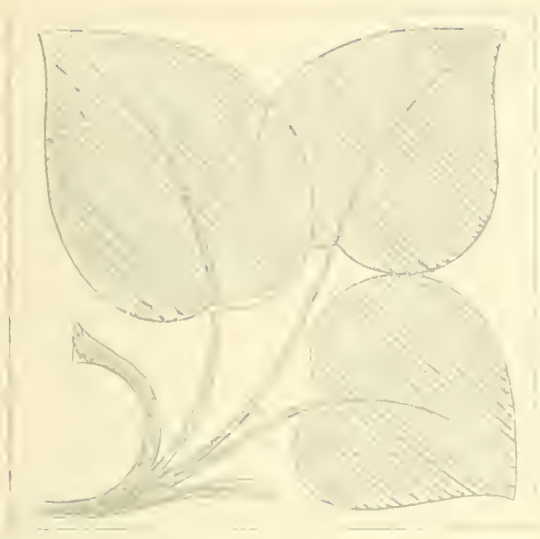












3

4



1



2



3



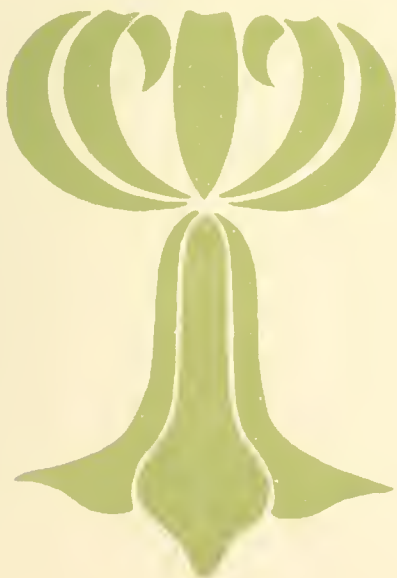
4















SECTION II

CONSTRUCTION OF DESIGNS

ELEMENTARY PRINCIPLES GOVERNING THE CONSTRUCTION OF DESIGNS

We will now proceed to the consideration of some of the laws of Ornament which, though well-known to the more advanced art students, are probably not familiar to many teachers and scholars of elementary schools. Such as are of use in Brush-Drawing are dealt with here, though others may be referred to for purposes of explanation.

It must be borne in mind that these principles are only to be used as guides, for exclusive slavery to one of them may be a violation of others. A genius might produce something artistically beautiful while working in direct opposition to many of them. We are not of that order and must therefore owe some obedience to the following principles underlying most good ornament:—

REPETITION, ALTERNATION, SYMMETRY, BALANCE, CONTRAST, VARIETY,
SERIES, TANGENTIAL JUNCTION, GROWTH, STABILITY, RADIATION,
REPOSE, FITNESS, SUPERPOSITION, and GEOMETRICAL ARRANGEMENT.

Repetition is placed first, as, even to the youngest child, it is unmistakably present. The first efforts in making strokes and curves involve a large amount of repetition. It is evident in the windows of a mill, **Repetition** a garden gate or fence, the details of a moulding, tiles, wall-papers, curtains, oilcloth, &c., and in nearly all the illustrations of this book. A simple form which does not mean much in itself must be repeated to make it ornamental. These forms may occur in lines horizontally and vertically, on a basis of the square, diamond, &c. One may be repeated one or more times on each side of an axis or alternated with some other form or forms. Speaking generally, the more conventional and further away from the natural form the better will the element bear repetition without becoming wearisome. *See Plate LIII.*

Alternation is merely a variation of repetition. Its effect is the pro-

duction of a contrast in the units of a drawing to prevent monotony. A drawing consisting of small repeated patterns may be relieved by inverting every other one, by using two contrasting patterns, or by making alternate ones of different colours, thus producing alternation of position, form, or colour.

Some of the preceding drawings are examples of this alternation, which may exist in borders, stripes, all-over patterns, and figures, enclosed by, or based upon, the circle, triangle, square, or any other geometrical figure. The principle is so obvious in a large number of drawings that further illustration is unnecessary. *See Plate LIV.*

Symmetry is probably the most important of all the principles of Ornament. It is the first law of orderly arrangement, and is simply the result of doubling some form upon a central axis. The most elementary shape, or one which may be meaningless or even ugly by itself, becomes ornamental when so doubled. The common trick of splashing ink upon a piece of paper and afterwards folding it, the crease forming the axis, is an illustration of the value of doubling.

Many drawings owe what beauty they have to symmetry, and others are largely dependent upon it; in fact, it goes a long way to make the success of a design, where without it the drawing would be a failure. Much beautiful work is done which is unsymmetrical, but we have only to look around us at our houses, furniture, ornaments, and even articles intended entirely for utility to realize the important part played by this law of symmetry in determining their shape. Symmetry is one of the principal factors in the beauty of animal forms. This is especially so in the human figure. It is said that no natural form is absolutely symmetrical, and that is true of plants and animals—particularly of the former. There may be greater development of one side of the human body than of the other, and the limbs in themselves are not symmetrical, but possess that quality by repetition, yet the two sides are in all but the smallest details alike. Any large departure from this means deformity, which is more or less displeasing. The mid-rib of a leaf will not always exactly form the doubling line of the parts on each side of it. In compound leaves the central part is more symmetrical than the others, but the general impression may be that of symmetry. All geometrical figures are necessarily symmetrical. *See Plate LV.*

Balance in a drawing is the placing of masses of equal weight or size on each side of an axis, or the even distribution of the different parts over a prescribed space. It is obvious that any arrangement which is symmetrical, is one in which the parts are equally balanced, but balance does not necessarily imply symmetry.

The portions of the drawing on each side of the axis may be of entirely different form though their total mass is the same. The axis may not be there at all, but a well-balanced drawing will suggest an imaginary line which divides it into parts of equal weight. A geometrical figure, or one upon a geometrical basis, may have several of these dividing lines.

The three diagrams under "Symmetry" illustrate this principle. "Balance" may be applied to colour. If there is a preponderance of a colour on one side of a real or imaginary axis over that on the other side, an odd appearance is produced. This would disappear, however, if the figure were repeated. *See Plate LVI.*

Contrast plays an important part in the construction of drawings. It may be said to occupy in the scale of importance a somewhat lower position than symmetry, but it is, nevertheless, of very great value. Its work is the correction of monotony. It is the bringing together of two opposite qualities, either in shape, line, relief, or colour.

A level stretch of moorland tires us in time and we wish for the brighter colours of cultivated fields, contrasting masses of foliage, hills, houses, and people. The beauty of scenery is largely due to the contrast of mountains with valleys, lakes, and streams; the various greens compared with the browns and grays of rocks, along with the effects of sunlight and cloud.

The mouldings of cornices, windows, and doorways contrast agreeably with the plain spaces of walls and ceilings. Ornament is enhanced in value by the absence of decoration on the space surrounding it.

Lines may be broken by masses; curved lines contrasted with straight ones or curves of an opposite kind, and sombre spaces brightened with contrasting colours.

It is hardly necessary to illustrate contrast in colour. Such combinations as yellow with purple, or blue with orange produce strong contrasts.

In moulded or carved work rounded portions may be contrasted with others bounded by straight lines, and the lower and graduated forms with

those of high relief, variety being produced by the breadth and depth of the shadows. Of course this has nothing to do with Brush-Drawing.

It is this quality of contrast which gives strength to a drawing, but it should not be overdone; or the drawing may appear to be cut up into small pieces, or wanting in harmony and repose. *See Plate LVII.*

Variety is the state of difference between a part of a drawing and that which immediately precedes or follows it. It is a mild form of contrast and possesses the same attributes in a less marked degree. The differences are less easily distinguished, as in the slight variation of the two sides of a leaf, the change of direction in a curve, or the placing in different positions of the same element. It counteracts the monotony of repetition. The lines of the human figure, the various positions or stages of growth in leaves, flowers, twigs, &c., give plenty of variety though they can hardly be said to be contrasted forms.

Series is a kind of Repetition, but while the latter may be a succession of single forms exactly alike, the former consists of a repetition of sets made up of two or more units which differ from one another. *See Plate LVII.*

The geometrical definition of a tangent is a line which touches a curve, and which, if produced, does not cut it. The lines may be two curves of opposite character, two or more curves in the same direction, or a curve and a straight line. Two curves or a curve and a straight line may be tangential at a point and afterwards continue in different directions, or they may combine and form one line, being tangential at their point of junction.

Tangential Junction is seen in the spring of blades and stems of grass, and in such plants as the hyacinth, crocus, &c., but its occurrence is rather the exception than the rule in plant-life generally.

It gives grace and beauty to a drawing, though it frequently produces weakness and monotony unless some vigorous form is used to break the continuity of the curves. The drawings of young children often exhibit a want of appreciation of this principle. Their junctions appear broken and abrupt, owing to a compression or dragging of the curve out of its place in order to meet another line at a required point.

It is better—though perhaps a matter of opinion—merely to suggest

the junction of lines in brush-work. The lines are usually of considerable breadth, and if they are actually made to touch they may be confused, or even form a blot at the place of meeting. In the painted ornament of Greek architecture this rule is generally observed. *See Plate LVIII.*

This principle can perhaps be better described than defined. The designer draws most of his ideas from plant-life. He examines the plant and notices the peculiarities of its growth in various stages. He observes the **Growth** strength and curve of the leaves and stem, the manner in which the leaves join the stem—perpendicularly, tangentially, alternately, &c.,—the unfolding of leaves showing the springing of others within, the curvature of a flexible stem, the twisting of the tendrils of such plants as the convolvulus and the vine, the turning of leaves, and the unfolding of the petals of a half-opened flower.

In all designs, therefore, particularly where the departure from natural forms is very slight, everything should be in accordance with this law of growth. Flowers should not be made to spring from the roots, being, as a rule, found near the top of the plant. For the purpose of filling a space easily, leaves should not be made to leave the stem in a downward direction, while others, following the natural growth of the plant, do not do so. A hard-wood plant should not be made to twist itself as a soft flexible stem might do.

It is sometimes difficult to avoid some slight violation of this principle of growth, and whenever it does occur the drawing should be conventional or far removed from the natural forms.

The meaning of the term is “standing firmly”. Anything which will not stand in the position for which it is intended, either from its shape or the **Stability** want of strength in the material of which it is composed, is entirely wanting in this quality. Vases or other ornaments, which seem to have a knack of getting knocked over without much apparent cause, bring this forcibly to our minds, and we mentally suggest a broader or heavier base. Any heavy object whose parts are kept together by weak and flimsy-looking connections gives us the impression that it is likely to fall to pieces. This material weakness in solid objects has its counterpart in the appearance presented by drawings.

If a design is made to fill a geometrical figure, the different parts may

be exactly repeated in the angles, or, in the case of a circle, at regular intervals and at the same distance from the circumference, but if not treated in this way the greatest weight must be at the bottom. The leading lines and masses should there be heavier and more solid than when nearing the top. The trunk of a tree is an adequate support for the weight of branches and foliage above it. A vase may be unstable in appearance on account of the smallness of its base, and it may also be weak in outline where its contour is one of uncertain curves. The introduction of straight lines will remedy this, in fact the straight line is the great corrective of weakness produced by the too frequent use of curves.

Certain plants with soft weak stems are not by nature suggestive of strength. The convolvulus or sweet pea, if used in drawing, should be attached in several places to a firm central line or other support. Either of these plants would, for instance, look out of place if executed pictorially, or in wood, metal, &c., to sustain the weight of a bracket.

The smaller details of a plant are generally in their proper place near the top or outside of a drawing. The principle of stability calls for considerable attention, because the beginner draws weak, uncertain, and aimless lines without knowing that he does so. Bold, vigorous curves, with plenty of change of direction, should be encouraged. If they cross one another, let them do so as nearly at right angles as possible, to prevent doubt as to their intention. The weak line may be strengthened by changing it to a straight line or more vigorous curve, by attaching it to something stronger, breaking it up by, or attaching it to, rectangular or other bold forms, or, it may be, by placing other lines of the same character side by side with it. See *Plates LVIII and LIX*.

Radiation is the springing of a number of lines or other forms from a common source. Speaking correctly, this source is a point, but instances occur of radiation from a line. There is no end to the examples of this law in nature, and as a result, its adaptation in ornamental work furnishes many others. The crocus, bluebell, lily, daffodil, honeysuckle, and palm-tree, with many others, from the outward curvature of their leaves, give examples of what is called "Palmate Radiation". A fan, the fingers, and the ribs of compound leaves illustrate the spring of straight lines from a centre. The petals of many flowers are directed in a straight line from

a centre. Leaves may radiate in series from a straight or curved line. The wings of birds and the markings and ridges of shells are expressions of this principle. If drapery be hung from two points the folds radiate more or less regularly from the points of suspension. The scroll and the Greek honeysuckle are instances of its adaptation. *See Plates LII and LX.*

Repose is the absence of an appearance of motion in a drawing. This apparent motion is the result of an excessive use of curves without the counter-acting effect of rectangular and straight-lined forms. There is some connection between the principles of Stability and Repose, because the whirling movement which seems to be a feature presented by some flowers, rosettes, and various running scrolls, is in opposition to both of them. There is further evidence of this relationship in the fact that the straight line is the most useful element in producing both Stability and Repose. In many inferior wall-papers, carpets, &c., even if the pattern itself does not display a tendency to revolve, wherever the eye alights it is carried round and round, and relief would be experienced if it could meet with something to arrest its progress. The borders with which we surround our designs fix them in their places, and, in addition, prevent any suggestion of movement in their outer portions. Striped decorations may sometimes exhibit a want of repose, in their carrying the eye in some particular direction—vertically, horizontally, or diagonally. *See Plates LXI and LXII.*

Fitness is the suitability of Ornament for the object to which it is applied. This is a quality in Ornament whose connection with Brush-Drawing may not be evident, but its importance as a factor in good design demands that some attention shall be given to it. Brush-forms are eminently suited to flat surfaces. The execution of objects in imitation of relief on floors and walls is more often a mistake than not. Curved surfaces may also be decorated by the brush, though the forms used should be restricted to those that do not become badly distorted by the curvature of the surface. The Greeks used painted decorations on the plain surfaces of their buildings with great effect, and the Moors painted their walls with intricate interlacing patterns and symbolic characters with good results.

Any ornament, whether constructive or applied, should not interfere with utility. However graceful the shape of a jug may be, if the neck is too narrow to admit of the inside being easily cleaned, or the

handle is placed at such a height that the jug will not pour easily, it is a failure.

The edge of a cup or glass should not be cut or moulded in such a way as to produce discomfort in drinking.

Acorns, walnuts, leaves, &c., sometimes carved on the back and arms of a chair do not form an agreeable support for the head and arms, and are open to question from a decorative point of view. Ornament of such a brittle or fragile character as to interfere with use cannot be commended.

The material to be worked in must be considered. Different results can be obtained in metal, marble, stone, clay, and wood. If the material be wood a great amount of undercutting is not allowable, as, owing to the grain, portions of it would easily break off. Relief work which is to be seen from a distance may be and ought to be executed with less attention to detail than that which is subject to close inspection.

Animal forms, particularly the human figure, are to be used sparingly for ceiling and floor ornamentation, from their liability to look ridiculous to the observer, who is bound to see them in an inverted position from some part of the room.

The realistic representation of solid objects in carpets or linoleums is a mistake. For instance, such a good imitation of cubical wooden blocks, with their angles uppermost, has been made upon oilcloth that a person entering the room actually drew his foot back, being under the impression for a moment that the objects were solid and really existed as they appeared.

The material in which a design for a textile is to be executed is of the highest importance. What will look well in silk or printed cotton may be the reverse in wool. A design suitable for tapestry, curtains, &c. would be obviously wrong in dress goods.

Many highly-finished fabrics, such as fine dress cloths, silks, satins, and velvets, need little or no ornamentation, as their beauty consists in their lustrous surface and the play of light and shade on their folds.

Another reference may be made to wall decorations. A wall-paper should not by its colour or pattern draw attention from the pictures in the room. It should form a background for them, and, therefore, should be unobtrusive in colour and design. But if the room be a large one, with much uncovered wall space, the beautifying of the spaces becomes a necessity.

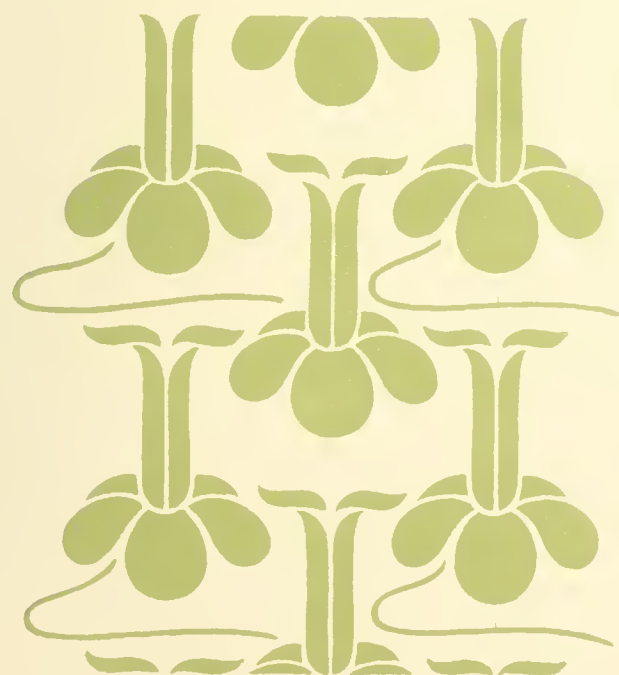
For the purpose of giving to a room an effect of greater height or breadth, vertical or horizontal stripes are sometimes used. An effect of light, warmth, or coolness is obtained by the use of suitable colours.

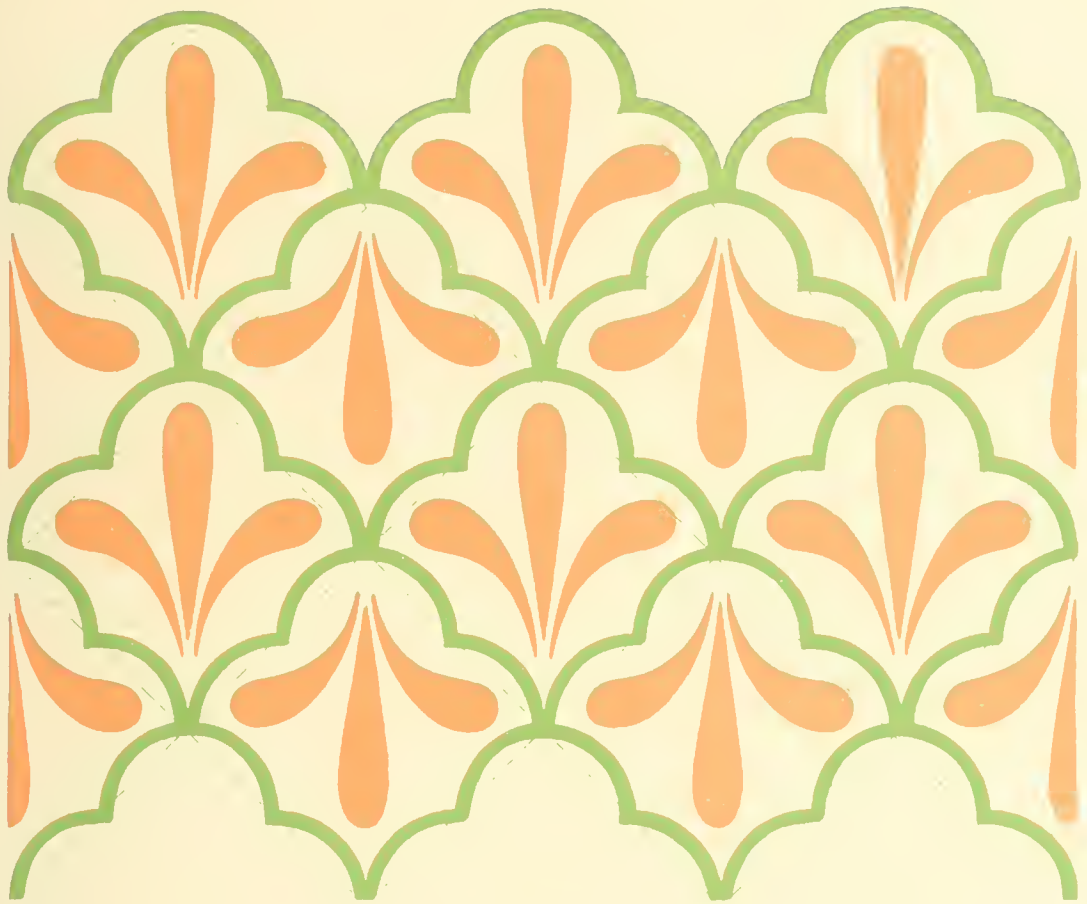
Good taste in the pattern, style, and colour of dress, and the harmony and pleasing effect of furniture, pictures, and general surroundings, combined with utility and comfort, are largely the result of the proper appreciation of the principle of Fitness.

Superimposed ornament is that which is placed on the surface of other ornament. The Moors made frequent use of this in their decorations, the most intricate of their designs sometimes involving two or three superpositions. The lower design is usually of a quieter and less vigorous character than the upper one. Such designs frequently consist of a flowing pattern placed upon a small geometric one, or geometric forms or stripes placed upon a flowing pattern. *See Plate LXIII.*

The circle, ellipse, straight line, hexagon, equilateral triangle, rectangle, square, and diamond are geometrical figures that are frequently used as ornament, either by themselves or filled with some suitable design to fit their particular shape. The straight line is illustrated in the fret, frequently used as a border. Tiles, pavements, panels, ceiling decorations, &c., usually take the form of enclosed geometrical figures.

The drawing of these figures as ornament must not be confounded with geometrical arrangement. The design has a square, oblong, triangle, diamond, or some other figure as its basis, but these figures do not actually appear, being only used for constructive purposes. Such an arrangement is indispensable in designs for woven and printed goods, where the unit has to be repeated many times. *See Plate LXIV.*





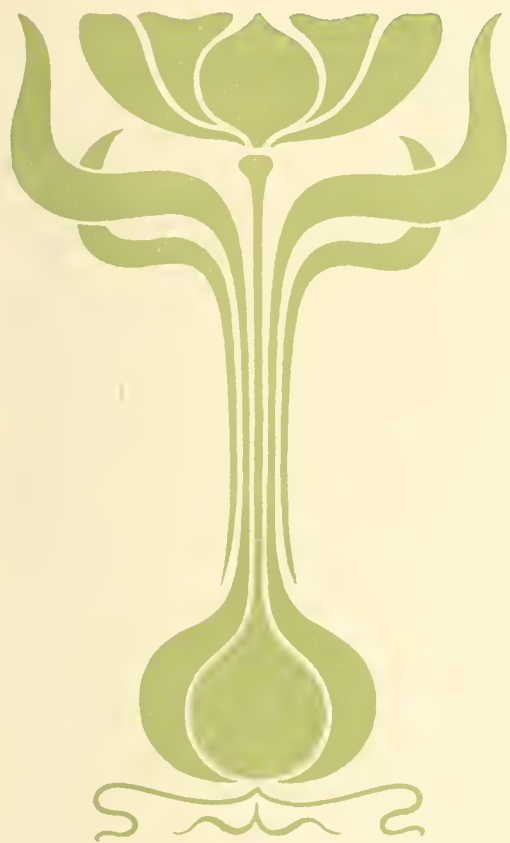


FIG. 17-11

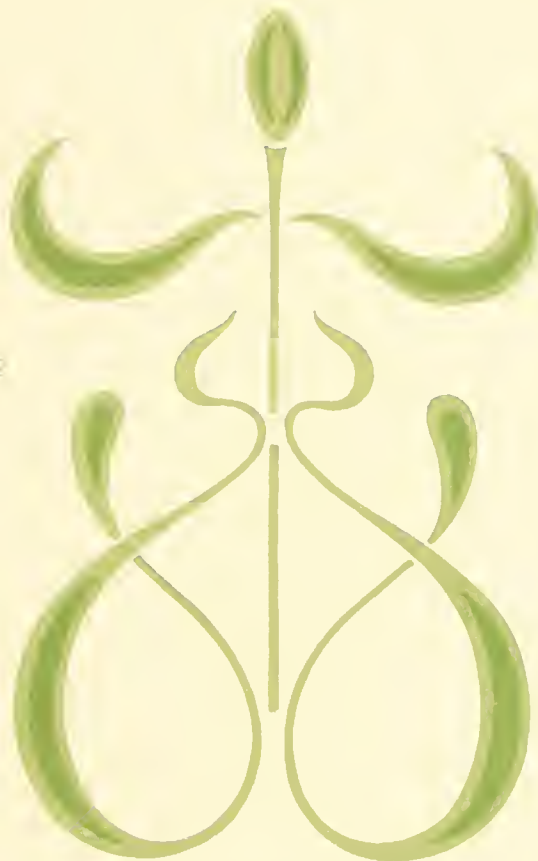


FIG. 17-12

3



FIG. 17-13



PLATE 18 (M. P. R.)

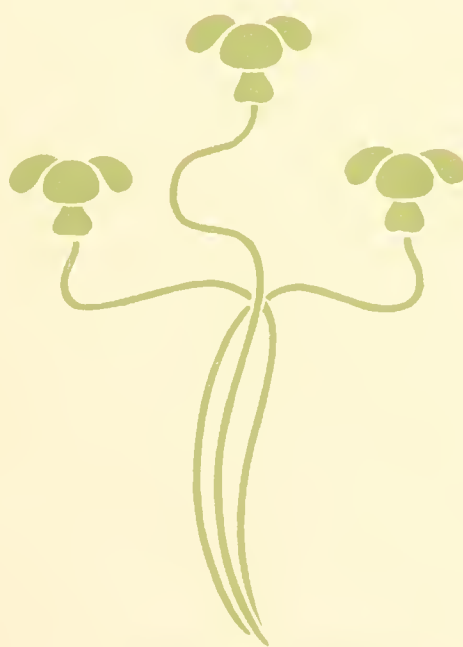
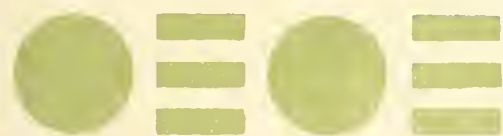


PLATE 18 (M. P. R.)



CONTRASTS IN SHAPE



CONTRASTS IN LINE



2



1



1

CONTRASTS IN COLOR, CONTRASTS IN COMPOSITION

SERIES



PLANT



PLANT GROUP



PLANT GROUP GROUP



MADE IN GERMANY, 1950. 18 CM DIA.



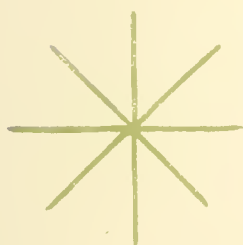
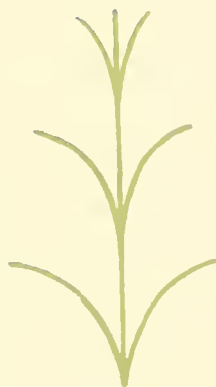
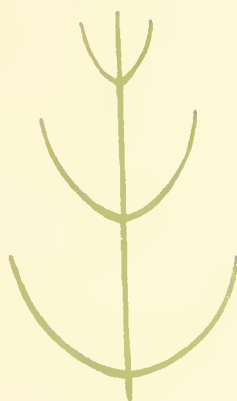
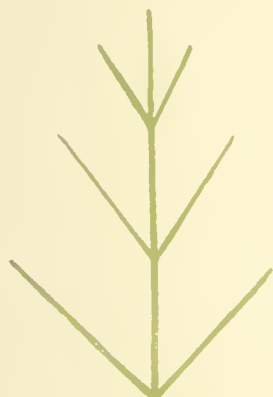
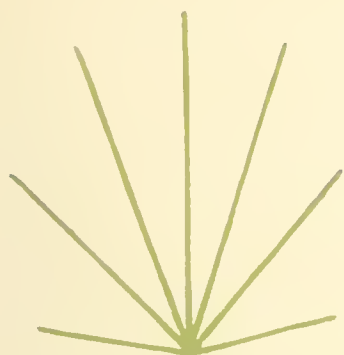
MADE IN GERMANY, 1950.



MADE IN GERMANY, 1950. 18 CM DIA.



MADE IN GERMANY, 1950. 18 CM DIA.





JOSEPH M. L. 1901



JOSEPH M. L. 1901



FLORAL

FLORAL





Fig. 100. 100



Fig. 101. 101



Fig. 102. 102





D 000 014 397 4

